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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/709,072	04/12/2004	Chia-Hung Lin	ACMP0093USA	3071

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EXAMINER	
SIM, YONG H	

ART UNIT	PAPER NUMBER
2629	

NOTIFICATION DATE	DELIVERY MODE
06/26/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/709,072	LIN, CHIA-HUNG	
	Examiner	Art Unit	
	Yong Sim	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *12 March 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6 and 8-11* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6 and 8-11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

1. Applicant's arguments with respect to claims 1 – 6 and 8 - 11 have been considered but are moot in view of the new ground(s) of rejection.

In reference to claims 1 and 6, claim 1 includes limitations from claim 6 and 7 and claim 6 includes limitations from claim 7. However, claims 1 and 6 both introduce the limitation reciting "create a plurality of gray-level images for each of one or more predetermined colors," which is a newly introduced limitation. Therefore, the action is made final under the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1 – 6 and 8 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ben-David et al. (Hereinafter "Ben-David" WO 01/95544) in view of Conner et al. (Hereinafter "Conner" US 5,625,434) and further in view of Yamauchi et al. (Hereinafter "Yamauchi" US 6,809,714 B1).

Re claim 1, Ben-David teaches a projector (48, Fig. 3B) comprising: a housing (Pg. 6, lines 20 – 21; "The present invention is suitable for various types of electronic display devices, such as televisions and monitor devices." A conventional television comprises a "housing."); a light source (50, Fig. 3B) installed in the housing;

a color wheel (54, Fig. 3B) for separating the light from the light source into color light (Pg. 16, lines 4 – 5; "passing white light from a source through appropriate color filters to form colored light.");

an image modulator for modulating the color light from the color wheel, and projecting the color light to form an image on a screen (60, Fig. 3B, Pg. 16, lines 11 – 14; "light illuminates spatial light modulator which determines the particular color for being displayed.");

a scalar (72, 74, 76, Fig. 3B) connected to the image modulator for controlling the image modulator for controlling the image modulator to create a plurality of gray-level images for each of one or more predetermined colors (Pg. 18, lines 8 – 18; "The brightness of that position is determined by the relevant data pixel in the image. The values for the pixels of the image are optionally and preferably retrieved from an image data file/a scalar for generating a grey-level image signal." The determination of the

brightness of each pixel/one or more predetermined color translates to a gray-scale image.); and

But does not describe a control circuit for projecting an on screen display (OSD) on a screen, the OSD comprising the plurality of gray-level images created by the scalar, and for adjusting a color wheel delay of the projector until the gray-level images corresponding to each color display the proper color on the OSD, thereby synchronizing the color wheel with the image modulator.

However, Conner discloses a digital motor controller for controlling both the phase and speed (color wheel delay) of a brushless DC motor which permits the color wheel to be synchronized to the data currently being displayed (Conner: Col. 2, lines 38 - 47).

Therefore, taking the combined teachings of Ben-David and Conner, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of adjusting a color wheel delay of the projector as taught by Conner into the projector as taught by Ben-David to obtain a projector wherein the color wheel on the screen delay is adjusted by controlling a brushless DC motor in all-digital design which permits logic circuitry for controlling both speed and phase of the motor (Conner: Col. 1, lines 64 – 67).

Ben-David as modified by Conner teaches a projector wherein a color wheel delay of the projector is adjusted corresponding color display the proper color on the screen.

But does not describe projecting an on screen display (OSD) on a screen, the OSD comprising the plurality of gray-level images created by the scalar.

However, Yamauchi teaches a color image processing apparatus wherein an adjustment by a user can be applied to any purpose such as pop-up/gray-level image of an adjusted value of every RGB signal by an on-screen display (OSD) mechanism (Yamauchi: Col. 4, lines 58 – 63).

Therefore, taking the combined teachings of Ben-David as modified by Conner and Yamauchi, as a whole, it would have been obvious to a person having ordinary skill in the art to incorporate the idea of using an OSD as taught by Yamauchi into the teachings of Ben-David as modified by Conner to obtain a projector wherein an OSD displays gray-scale images of color wheel delay for color adjustment to provide a user with a real time adjustment capability for accuracy (Yamauchi: Col. 4, lines 55 – 59).

Re claim 2, Ben-David teaches the projector of claim 1 wherein the image modulator is a digital micromirror device (DMD) (Pg. 17, lines 10 – 14; "modulation type include DMD.").

Re claim 3, Ben-David teaches the projector of claim 1 wherein the gray-level image has 32 gray-levels (Pg. 22, lines 2 – 3; "The various "gray levels" of the illumination can be achieved in different ways depending on the type of spatially modulated mask is used.").

Re claim 4, Ben-David teaches the projector of claim 1 wherein gray-level images are generated for 3 colors (Pg. 18, line 1; "Filter wheel holds at least four color filters.").

Re claim 5, Ben-David teaches the projector of claim 4 wherein the 3 colors having gray-level images are red, green, and blue (Pg. 20, line 3 – 4; "obtain digital RGB (three-color) image data 72." Note that image data 72 corresponds to the scalar as discussed in claim 1, which is used to generate gray-level images.) .

Claim 6 recites limitations that have been covered in claim 1. Therefore, it has been analyzed and rejected w/r to claim 1. With respect to said method for adjusting, the applicant merely recites the elements and limitations as described in claim 1, and does not disclose a specific method of adjusting a projector. Therefore, it has been rejected w/r to claim 1.

Claim 8 recites limitations that have been covered in claim 2. Therefore, it has been analyzed and rejected w/r to claim 2.

Claim 9 recites limitations that have been covered in claim 3. Therefore, it has been analyzed and rejected w/r to claim 3.

Claim 10 recites limitations that have been covered in claim 4. Therefore, it has been analyzed and rejected w/r to claim 4.

Claim 11 recites limitations that have been covered in claim 5. Therefore, it has been analyzed and rejected w/r to claim 5.

Conclusion

4. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Yong Sim whose telephone number is (571) 270-1189. The examiner can normally be reached on Monday - Friday (Alternate Fridays off) 7:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

YHS
6/6/2007

AMR A. AWAD
SUPERVISORY PATENT EXAMINER